

## CLAIMS

What is claimed is:

- 5 1. A gate assembly for diverting substantially flat articles, the gate assembly comprising:
  - a mounting bracket having an upright support member and a mounting member
  - secured to the upright support member;
  - at least one protrusion formed on the mounting member;
  - 10 a diverter vane having a slot for slidably receiving at least a portion of the upright support member of the mounting bracket;
  - at least one recessed area formed in the diverter vane, each recessed area receiving a corresponding protrusion of the mounting member; and
  - motion means secured to the mounting bracket for selectively moving the
  - 15 combined mounting bracket and diverter vane thereby directing the articles to a predetermined desired location.
2. The gate assembly of claim 1 wherein the mounting member comprises a first mounting member and a second mounting member.
- 20 3. The gate assembly of claim 2 wherein the first mounting member has two protrusions and the second mounting member has two protrusions.
4. The gate assembly of claim 1 wherein the slot of the diverter vane has a
- 25 substantially keyhole shaped configuration.
5. The gate assembly of claim 4 wherein the slot slidably receives at least a portion of the upright support member and at least a portion of the mounting member.

6. The gate assembly of claim 1 wherein the upright support member of the mounting bracket has a first end and a second end, and further comprising:

securement means associated with the first end and the second end for releasably securing the diverter vane to the upright support member of the mounting bracket.

7. The gate assembly of claim 6 wherein the securement means includes a first groove about the first end of the upright support member of the mounting bracket and a second groove about the second end of the upright support member of the mounting bracket, and further including a first clip positionable within the first groove and a second clip positionable within the second groove.

8. The gate assembly of claim 1 wherein the motion means has a post, and further comprising:

mounting means associated with the mounting bracket for releasably securing the mounting bracket to the post of the motion means.

9. The gate assembly of claim 1 wherein the motion means is a solenoid device.

10. A gate device for diverting and directing articles in a sorting machine, the gate device comprising:

a bracket member mounted to the sorting machine, the bracket member having at least one protrusion; and

a vane member mounted to the bracket member, the vane member having at least one corresponding recessed area and removable from and mountable to the bracket member without removing the bracket member from the sorting machine;

wherein the combined bracket member and the vane member selectively movable to direct the articles to a predetermined desired location.

11. The gate device of claim 10 wherein the bracket member has an upright support member and a mounting member secured to the upright support member and the vane member has a slot for slidably receiving at least a portion of the upright support member.
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12. The gate device of claim 11 wherein the slot of the vane member has a substantially keyhole shaped configuration.
13. The gate device of claim 12 wherein the slot slidably receives at least a portion of
- 10 the upright support member and at least a portion of the mounting member.
14. The gate device of claim 10 wherein the upright support member of the bracket member has a first end and a second end, and further comprising:
- securement means associated with the first end and the second end for releasably
- 15 securing the vane member to the upright support member of the bracket member.
15. The gate device of claim 14 wherein the securement means includes a first groove about the first end of the upright support member of the bracket member and a second
- 20 groove about the second end of the upright support member of the bracket member, and further including a first clip positionable within the first groove and a second clip positionable within the second groove.
16. A method for replacing a diverter vane in a sorting machine, the method
- 25 comprising:
- providing a bracket having an upright support member and a mounting member secured to the upright support member;
- forming protrusions on the mounting member;

forming recessed areas in the diverter vane for receiving the protrusions of the  
mounting member;  
releasably mounting the diverter vane on at least a portion of the upright support  
member of the bracket; and  
5 releasably securing the diverter vane on the bracket.

17. The method of claim 16, and further comprising:  
forming a substantially keyhole shaped slot on the diverter vane; and  
directing the upright support member into the keyhole shaped slot thereby  
10 mounting the diverter vane on the bracket.

18. The method of claim 17, and further comprising:  
directing the upright support member and at least a portion of the mounting  
member into the keyhole shaped slot.

15 19. The method of claim 16, and further comprising:  
forming a first groove about a first end of the upright support member;  
forming a second groove about a second end of the upright support member;  
positioning a first clip within the first groove; and  
20 positioning a second clip within the second groove.